



**NAVSEA**

**WARFARE CENTERS**

Indian Head EOD Technology Division

NAVAL SURFACE WARFARE CENTER

**INDIAN HEAD EXPLOSIVE ORDNANCE DISPOSAL TECHNOLOGY DIVISION**

# **CAD/PAD International Logistics Meeting (2018 ILM)**

## **CAD/PAD Health Metric T-45**



# CAD/PAD Health Assessment



DODICs with Trace Data	Current data		Projected - lose largest lot		Production Risk	Technical Risk	Overall Risk	OA Scheduled	Next Est. Delivery Date	TMS
	No SLEs	Params applied	No SLEs	Params applied						
CWDR	Red	Red	Red	Red	No History	1-3 Months	Critical	FY20	6/30/2019	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
M720	Red	Red	Red	Red	No History	0-1 Months	Critical	FY20	6/30/2018	T-45C
MF72	Green	Green	Red	Yellow	3-6 Months	0-1 Months	Med. Risk	FY20	12/3/2018	AV-8B, EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NAV-8B, NEA-18G, NFA-18C, NFA-18D, T-45C, TAV-8B
MJ98	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY18	NONE	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, NFA-18C, NFA-18D, S-3B, T-45C, TAV-8B
MT13	Green	Green	Green	Green	6+ Months	1-3 Months	No Risk	FY18	7/31/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
MT16	Green	Green	Red	Red	6+ Months	1-3 Months	Med. Risk	FY18	8/31/2018	EA-18G, FA-18B, FA-18D, FA-18F, NEA-18G, NFA-18D, T-45C
MT29	Green	Green	Green	Green	6+ Months	1-3 Months	No Risk	FY19	5/29/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
MT30	Red	Yellow	Red	Red	6+ Months	0-1 Months	High Risk	FY20	6/8/2018	EA-18G, FA-18B, FA-18D, FA-18F, NEA-18G, T-45C
MT31	Red	Yellow	Red	Red	6+ Months	0-1 Months	High Risk	FY20	6/8/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
MT88	Green	Green	Red	Red	6+ Months	0-1 Months	Med. Risk	FY18	6/30/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
MT89	Green	Green	Yellow	Green	6+ Months	0-1 Months	Low Risk	FY18	12/24/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
MT91	Green	Green	Green	Green	3-6 Months	1-3 Months	No Risk	FY18	6/29/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
MT97	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	FY18	7/31/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
MT98	Green	Green	Green	Green	6+ Months	0-1 Months	No Risk	FY18	6/29/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, NFA-18C, NFA-18D, T-45C
MU37	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	NONE	T-45C
SN95	Green	Green	Red	Yellow	1-3 Months	0-1 Months	Med. Risk	FY19	NONE	T-45C
SN96	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	NONE	T-45C
SR96	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY18	NONE	T-45C

# CAD/PAD Health Assessment



DODICs with Trace Data	Current data		Projected - lose largest lot		Production Risk	Technical Risk	Overall Risk	OA Scheduled	Next Est. Delivery Date	TMS
	No SLEs	Params applied	No SLEs	Params applied						
SR97	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	SMDC	9/30/2018	T-45C
SR98	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	SMDC	9/30/2018	T-45C
SR99	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	FY18	9/30/2018	T-45C
SS02	Green	Green	Red	Yellow	No History	0-1 Months	Med. Risk	FY18	NONE	T-45C
SS03	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	FY18	9/30/2018	T-45C
SS52	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	12/31/2018	T-45C
SS83	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	SMDC	9/30/2018	T-45C
SS84	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	SMDC	9/30/2018	T-45C
SS85	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	SMDC	9/30/2018	T-45C
SS86	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	SMDC	9/30/2018	T-45C
SS87	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	SMDC	9/30/2018	T-45C
SS88	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	SMDC	9/30/2018	T-45C
SU54	Green	Green	Red	Red	3-6 Months	0-1 Months	Med. Risk	FY18	NONE	T-45C
SU55	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY18	NONE	T-45C
SU56	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY18	NONE	T-45C
SU57	Green	Green	Red	Red	1-3 Months	0-1 Months	Med. Risk	FY18	NONE	T-45C
SU58	Green	Green	Red	Red	1-3 Months	0-1 Months	Med. Risk	FY18	7/9/2018	T-45C
SU60	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	NONE	T-45C
SU61	Green	Green	Yellow	Green	0-1 Months	0-1 Months	Low Risk	FY19	NONE	T-45C
SU62	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	NONE	T-45C
SU63	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	NONE	T-45C
SU64	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	NONE	T-45C
SU71	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	10/31/2018	T-45C
SU72	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	10/31/2018	T-45C
SU73	Green	Green	Red	Red	1-3 Months	0-1 Months	Med. Risk	SMDC	NONE	T-45C
SU75	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	NONE	T-45C
SU76	Yellow	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	10/31/2018	T-45C
SU77	Green	Green	Yellow	Green	0-1 Months	0-1 Months	Low Risk	FY19	NONE	T-45C
SU78	Green	Green	Yellow	Green	0-1 Months	0-1 Months	Low Risk	FY19	NONE	T-45C

# CAD/PAD Health Assessment



DODICs with Trace Data	Current data		Projected - lose largest lot		Production Risk	Technical Risk	Overall Risk	OA Scheduled	Next Est. Delivery Date	TMS
	No SLEs	Params applied	No SLEs	Params applied						
SU79	Green	Green	Yellow	Green	0-1 Months	0-1 Months	Low Risk	FY19	NONE	T-45C
SU81	Green	Green	Yellow	Green	0-1 Months	0-1 Months	Low Risk	FY19	NONE	T-45C
SU86	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	NONE	T-45C
SU88	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	9/25/2018	T-45C
SU89	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	10/31/2018	T-45C
SU91	Yellow	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	NONE	T-45C
SU92	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	NONE	T-45C
SU96	Yellow	Green	Red	Red	No History	0-1 Months	Med. Risk	FY19	NONE	T-45C
SU98	Yellow	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	11/24/2018	T-45C
SV01	Green	Green	Yellow	Green	0-1 Months	0-1 Months	Low Risk	FY19	NONE	T-45C
SV02	Green	Green	Green	Green	0-1 Months	0-1 Months	No Risk	FY19	NONE	T-45C
SV03	Green	Green	Green	Green	0-1 Months	0-1 Months	No Risk	FY19	NONE	T-45C
SV04	Green	Green	Yellow	Yellow	0-1 Months	0-1 Months	Med. Risk	FY19	NONE	T-45C
SV05	Green	Green	Yellow	Green	0-1 Months	0-1 Months	Low Risk	FY19	NONE	T-45C
SV06	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	11/24/2018	T-45C
WB15	Green	Green	Green	Green	1-3 Months	0-1 Months	No Risk	FY18	7/26/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
WB16	Green	Green	Green	Green	3-6 Months	0-1 Months	No Risk	FY18	8/31/2018	EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NEA-18G, T-45C
WB54	Red	Red	Red	Red	6+ Months	0-1 Months	Critical	FY18	2/1/2019	T-45C
XW53	Green	Green	Red	Red	6+ Months	0-1 Months	Med. Risk	FY18	8/31/2018	EA-18G, FA-18B, FA-18D, FA-18F, NEA-18G, NFA-18D, T-45C, TAV-8B
XW54	Green	Green	Red	Red	1-3 Months	0-1 Months	Med. Risk	FY20	7/11/2019	EA-18G, FA-18B, FA-18D, FA-18F, NEA-18G, NFA-18D, T-45C, TAV-8B
XW71	Green	Green	Red	Red	0-1 Months	0-1 Months	Med. Risk	FY19	NONE	AV-8B, EA-18G, FA-18A, FA-18B, FA-18C, FA-18D, FA-18E, FA-18F, NAV-8B, NEA-18G, NFA-18C, NFA-18D, T-45C, TAV-8B
XW78	Green	Green	Red	Red	No History	0-1 Months	Med. Risk	FY18	7/27/2018	AV-8B, NAV-8B, T-45C, TAV-8B



# T-45 Trouble Item Summary



DoDIC	Name	Issue	Current Mitigation	Get Well Date	Future Mitigation
<b>M720</b>	Cartridge Actuated Initiator	<b>Lot Failure</b> <ul style="list-style-type: none"> <li>- LAT test failure still not resolved.</li> <li>- Delayed delivery and limited stock has lead to grounded aircraft</li> <li>- USAF item configuration not usable as is in USN aircraft</li> </ul>	<ul style="list-style-type: none"> <li>- Seeking to expedite failure investigation</li> <li>- Investigate USAF item rework to make configuration usable in USN aircraft</li> </ul>	June 2019	Second source effort (USAF current uses another source)
<b>WB54</b>	JAU-75/A 0.5 second delay initiator+	<b>Production</b> <ul style="list-style-type: none"> <li>- Production line experienced a test failure on another program in Oct 2017 delayed delivery</li> <li>- Several items competing for priority from single production line</li> <li>- Early change-outs driven by deployments resulting in depleted stock</li> </ul>	<ul style="list-style-type: none"> <li>- SLE to mitigate shortages</li> <li>- Prioritize deliveries</li> </ul>	April 2019	Qualification of Digital in-line Timer (DIT) alternative for other SCID programs (i.e. T-6, T-38) MC50 alternative for WB55 (reduces burden of WB55 on contractor, allowing them to make other configurations)
<b>CWDR</b>	Thermal Battery MXU-792A/A	<b>Obsolescence</b> <ul style="list-style-type: none"> <li>- Obsolescence issues hindering new procurement. Currently no IH contract in place</li> <li>- Working with PMA-202 to get units from their contract</li> <li>- Qualification required on replacement (Green Battery)</li> </ul>	<ul style="list-style-type: none"> <li>- PR being routed in advance of Type III release</li> </ul>	Approximately Feb 2020 (will be based on FY18 contract award)	Procure new "Green Battery".
<b>MT30, MT31</b>	Underseat Rocket Motor	<b>Transportation</b> <ul style="list-style-type: none"> <li>- International shipping and DCMA approvals delaying delivery of assets</li> </ul>	<ul style="list-style-type: none"> <li>- Work with contractor and DCMA to address any issues</li> <li>- Closely managing issuing stock</li> <li>- Service Life Extensions (SLE) where applicable</li> </ul>	June 2018	Resolve standing shipping delay issues, or allow more time to receive assets in requirements planning



# M720 – Cartridge Actuated Initiator

Shelf Life 144 / Installed Life 84

As of 2 April 2018

## Project Overview / Summary



### Production:

- Contract 15CK057: LAT failure. One unit exceeded max pressure. Possible overload condition or cracked propellant grains. Weekly telecons with contractor.
- Contract 16CK026: Contractor is building at risk. Implementing potential fixes.

### Service Life Extensions (SLE):

- Current limits: Install – 126 months. Shelf – 190 months.
- HRA Presented to PMA-273 on 16 Jan 2018. PMA-273 did not accept risk of going to 202 months shelf and 138 months install.

### Future Ordnance Assessment (OA):

- OA testing scheduled for FY20

### Second Source:

- USAF procures M720s competitively
  - Second source effort planning underway: delta qual. with old installed assets
- Current USAF second source unit does not accept NACES adapter
  - Exploring options to modify units and/or configuration
- Investigating rework of units by IH Manufacturing using IH rework procedures
  - Long lead time due to procurement of parts and FAT requirement

## Current Status / Actions / Risks

Likelihood	5					Milestone	Baseline	Current
	4		e			Delivery	Sept 2016	Jun 2019
	3					Delivery	Jun 2017	Jun 2018
	2				P			
	1							
		1	2	3	4	5	Consequence	

### (P)roduction:

- If failure issue is not resolved, then additional aircraft will be grounded (27 additional aircraft by Jan 2019, 64 additional aircraft by Jan 2020)
- Mitigation: Continue working with contractor to help address issues and maintain priority
- Mitigation: Qualify Second Source configuration for Navy use (may require rework)
- Mitigation: Pursue Indian Head lot build (4yr effort)

### S(e)cond Source:

- If qualification program is not complete by Aug 2018, we will be reliant on deliveries to avoid additional groundings
- Attempting to reduce schedule by using expired installed items (avoids need to manufacture test items or use issuable stock for test)
- Using existing F-15 USAF performance data to reduce testing required for qualification

## Help Needed

- Assist with PMA-202 and AIR 4.6 second source qualification staffing
- Coordinate assistance for asset management

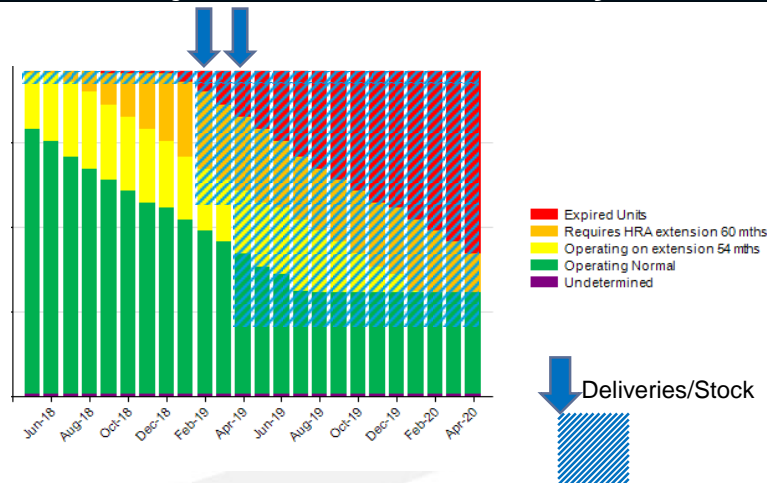
# WB54 – Cartridge Actuated Initiator

Shelf Life 84 / Installed Life 48

As of 2 April 2018



## Project Overview / Summary



### Production:

- Production of new material competing with several other items on other platforms
- Combat aircraft have been given higher priority in general, including items which cannot receive long SLEs.
- Failure on T-6 design was under investigation, temporarily delayed WB54 production

### Service Life Extensions (SLE):

- Current Ordnance Assessment data supports SLEs to 54 months installed life
- RA to support HRA on plan, will be routed to PMA-273 by end of June

### Future Ordnance Assessment (OA):

- Testing completed in April 2018
- No major issues noted, data pending statistical analysis

## Help Needed

- Prevent early change-outs to avoid unplanned stock shortages and reduced SLEs
- Assist in change-outs for OA testing through May 2018

## Current Status / Actions / Risks

Likelihood	5					Milestone	Baseline	Current
	4				P	16-C-K084 Base Award	29 Sep 16	29 Sep 16
	3		O		I,S	Delivery	30 Sep 18	1 Feb 19
	2					Option Award	19 Jul 17	19 Jul 17
	1					LAT Delivery	18 Jan 19	18 Jan 19
						18NB022 IDIQ Award	25 Apr 19	25 Apr 19
Consequence								
	1	2	3	4	5			
							8 Oct 18	8 Oct 18

### (P)roduction:

- If backlog on SCID production is not addressed WB54 deliveries will be delayed
- Mitigation: Continue to set SCID prioritization with contractor

### (I)ventory/E-Stock:

- If deliveries are not received by Feb 2019, then current stock will be unable to keep all aircraft operational

### (S)LE:

- If statistical analysis of OA data is insufficient to support additional extensions by NSWIC IHEODTD beyond 54 months installed by Aug 2018, aircraft could be grounded.
- Mitigation: Generate an RA to support an HRA for higher level risk acceptance by PMA-273 for additional SLE's

### Future (O)A:

- If units are not replaced and returned for OA, all performance evaluations will be based on existing data
- Mitigation: Identify key assets for change-out and ensure unit return

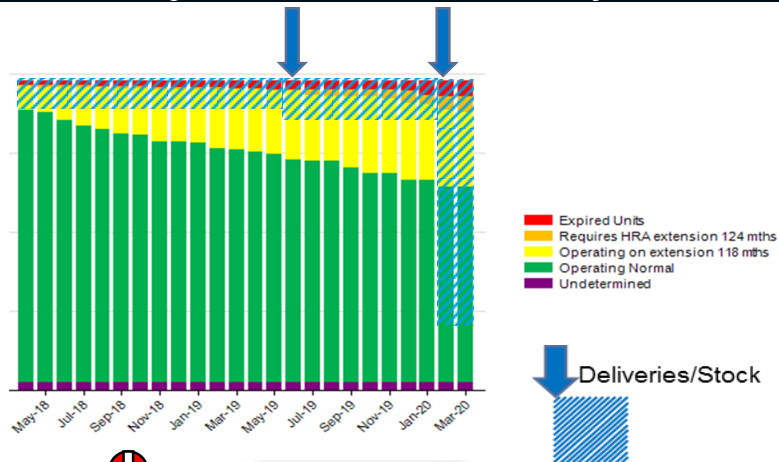
# CWDR – Thermal Battery MXU-792A/A

Shelf Life 120 / Installed Life 96

As of 2 April 2018



## Project Overview / Summary



### Production:

- Obsolescence issues hindering new procurement. Currently no contract in place.
- Qualification required on new "Green Battery".
- PR being routed in advance of Type III release
- Opportunity for final small buy (qty 151) on existing NAVAIR contract.

### Service Life Extensions (SLE):

- 118 months units remain with specification. Current OA data may support additional SLE time.

### Future Ordnance Assessment (OA):

- OA conducted at Hill AFB.
  - Statistical analysis completed Jan 2018, Data analysis being worked.
  - Risk analysis (if required) will be initiated Sep 2018.
- Next test in FY20

## Help Needed

- Production line to submit requirements in time to support need date
- PMA 265 to request assistance from PMA 202 with Class I ECP approval to facilitate Type III release of green battery.
- Notification for any long term down aircraft being brought back up

## Current Status / Actions / Risks

Likelihood	5						Milestone	Baseline	Current
	4						MBA/PMA-202	Jul 2017	Jun 2019
	3						Contract Award	Mar 2018	Jul 2018
	2			O		P	Delivery over multiple lots	Oct 2019	Feb 2020
	1					I			
		1	2	3	4	5	Consequence		

### (P)roduction:

- If new contract deliveries are not received by mid 2020, then an approved HRA would be required to keep aircraft operational
  - Mitigation: with SLEs on current installed assets.

### (I)ventory/E-Stock:

- If too many items are issued, then RIK units and CODR replacements would not be available
  - Mitigation: manually manage stock
  - Mitigation: issue SLEs when appropriate

### Future (O)A:

- If too few units are returned for OA testing, then data may not be available to support extensions beyond 124 months
  - Mitigation: work with the fleet to return all items replaced in the fleet



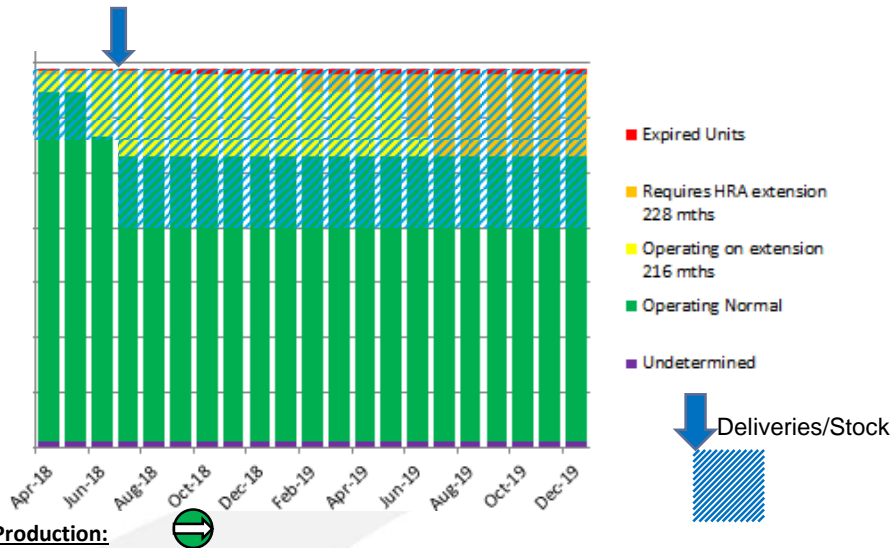
# MT30 Underseat Rocket Motor

Shelf Life 204 months / Installed Life N/A

As of 2 April 2018



## Project Overview / Summary



## Current Status / Actions / Risks

Likelihood	5	P1					Milestone	Baseline	Current
	4						16CK076	Jan 2018	Jun 2018
	3						16CK076	Jan 2018	Jun 2018
	2								
	1				P2				
		1	2	3	4	5	Consequence		

### Production:

- (P1) If delivery of the lots is delayed to July 2018 or later, service life extensions would be required to keep aircraft operational
- (P2) If lot is found unacceptable and rework lot delivers July 2019 or later, an approved HRA would be required to keep aircraft operational

### Production:

- Have had regular shipping delays from Contractor
- Awaiting failure investigation for bent pin on x-ray and ballistic failures

### Service Life Extensions (SLE):

- Positive performance history, extensions to 216 months shelf supported
- No propellant stability concerns (Item is low in the cockpit and shielded from the sun by the seat)

### Future Ordnance Assessment (OA):

- Last tested in 2017, successfully tested units with oil present at input
- Next Planned OA is 2020

## Help Needed

- Production line to submit requirements in time to support need date
- Notification for any long term down aircraft being brought back up

**Shipping Delay**

Distribution Statement A (18-125): Approved for Public Release; Distribution unlimited.

# MT31 Underseat Rocket Motor

Shelf Life 204 months / Installed Life N/A

As of 2 April 2018



## Project Overview / Summary



### Production:

- Have had regular shipping delays from contractor
- Awaiting failure investigation for bent pin on x-ray and ballistic failures

### Service Life Extensions (SLE):

- Positive performance history, extensions to 216 months shelf supported
- No propellant stability concerns (Item is low in the cockpit and shielded from the sun by the seat)

### Future Ordnance Assessment (OA):

- Last tested in 2017, successfully tested units with oil present at input
- Next Planned OA is 2020

## Current Status / Actions / Risks

Likelihood	5	P1					Milestone	Baseline	Current
	4						16CK076	Dec 2017	Jun 2018
	3						16CK076	Jan 2018	Jun 2018
	2						16CK076	Sep 2018	Nov 2018
	1				P2		16CK076	Sep 2018	Nov 2018
		1	2	3	4	5	Consequence		

### Production:

- (P1) If delivery of the lots is delayed to July 2018 or later, service life extensions would be required to keep aircraft operational
- (P2) If lot is found unacceptable and rework lot delivers July 2019 or later, an approved HRA would be required to keep aircraft operational

## Help Needed

- Production line to submit requirements in time to support need date
- Notification for any long term down aircraft being brought back up

**Shipping Delay**